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NABL ACCREDITED AS PER ISO/IEC 17025:2005

Job No.: CECTC-MK-PMC-2014-15 Date: 28.04.2014

TEST REPORT

CLIENT	:	**Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
AGENCY	:	**Sri. M. Krishnamurthy,** Contractor, Bangalore.
NAME OF THE WORK	:	Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
REFERENCE		EE/RRND/PR/06-1/2013-14 Dated: 07.01.2014
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part -5)	170 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	370 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	28.0 %	-

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Job No.: CECTC-MK-PMC-2014-15 Date : 28.04.2014

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency : **Sri. M. Krishnamurthy,** Contrator, Bangalore.
Name of Work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Reference : EE/RRND/PR/06-1/2013-14 Dated:07.01.2014

Date of Testing : 28.04.2014
Material : Sand Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	64	6.40	6.40	93.6	90-100
2.36	124	12.40	18.80	81.2	75-100
1.18	165	16.50	35.30	64.7	55-90
600 Micron	200	20.00	55.30	44.7	35-59
300 Micron	200	20.00	75.30	24.7	8-30
150 Micron	165	16.50	91.80	8.2	0-10

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Job No.: CECTC-MK-PMC-2014-15 Date : 28.04.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency : **Sri. M. Krishnamurthy,** Contrator, Bangalore.
Name of Work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Reference : EE/RRND/PR/06-1/2013-14 Dated:07.01.2014

Date of Testing : 28.04.2014
Material : 40mm Aggregates

Total wt. of aggregates in gms = **15000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	455	3.03	3.03	96.97	95-100
20	8165	54.43	57.47	42.53	30-70
10	3265	21.77	79.23	20.77	10-35
4.75	2789	18.59	97.83	2.17	0-5

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Job No.: CECTC-MK-PMC-2014-15 Date : 28.04.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency : **Sri. M. Krishnamurthy,** Contrator, Bangalore.
Name of Work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Reference : EE/RRND/PR/06-1/2013-14 Dated:07.01.2014

Date of Testing : 28.04.2014
Material : 20mm Aggregates

Total wt. of aggregates in gms = **5000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
40	0	0	0	100	100
20	200	4.0	4.0	96.0	95-100
10	2748	55.0	59.0	41.0	25-55
4.75	1865	37.3	96.3	3.7	0-10

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Job No.: CECTC-MK-PMC-2014-15 Date: 28.05.2014

TEST REPORT ON CONCRETE CUBES

Client : **Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency : **Sri.N.M.Krishnamurthy,** Contractor, Bangalore.
Name of the work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Reference : EE/RRND/PR/06-1/2013-14 Dated: 07.01.2014
Sample ID : Cement Concrete
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm^2
Technical Reference : IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete : M_{20}
Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	30.04.2014	28.05.2014	8.177	524.2	23.30
2	30.04.2014	28.05.2014	8.169	519.8	23.10
3	30.04.2014	28.05.2014	8.193	532.4	23.66

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Job No.: CECTC-MK-PMC-2014-15 **Date:** 27.05.2014

Agregate Impact Value
IS: 2386 Part IV

Client	**Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency	**Sri. M. Krishnamurthy,** Contractor, Bangalore.
Name of the Work	Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Refrence	EE/RRND/PR/06-1/2013-14 Dated: 07.01.2014
Location	At Site
Type of Mix	Wet Mix macadam
Date of Testing	27.05.2014

Sl No.	Details	Trial No. 1	2	3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	378	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	88	86	90	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	294	292	296	
4	Aggregate Impact value = percent fines $100^* (W_2/W_1)\%$	23.04	22.75	23.32	23.03

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CECTC-MK-PMC-2017-18 Date : 27.05.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency : **Sri. M. Krishnamurthy,** Contractor, Bangalore.
Name of Work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Refrence : EE/RRND/PR/06-1/2013-14 Dated: 07.01.2014
Date of Testing : 27.05.2014
Material Type : Wet Mix Macadam
Sample Location : At Site Oven Dry Wt (gm): **10620**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	360	360	3.4	96.6	95-100
22.4	3568	3928	37.0	63.0	60-80
11.2	1984	5912	55.7	44.3	40-60
4.75	1745	7657	72.1	27.9	25-40
2.36	1198	8855	83.4	16.6	15-30
0.600	755	9610	90.5	9.5	8-22
0.075	700	10310	97.1	2.9	0-5

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Job No.: CECTC-MK-PMC-2017-18 Date : 27.05.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency : **Sri. M. Krishnamurthy,** Contractor, Bangalore.
Name of Work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Refrence : EE/RRND/PR/06-1/2013-14 Dated: 07.01.2014
Date of Testing : 27.05.2014
Material Type : Wet Mix Macadam
Sample Location : At Site Oven Dry Wt (gm): **10650**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	365	365	3.4	96.6	95-100
22.4	3570	3935	36.9	63.1	60-80
11.2	1985	5920	55.6	44.4	40-60
4.75	1750	7670	72.0	28.0	25-40
2.36	1185	8855	83.1	16.9	15-30
0.600	780	9635	90.5	9.5	8-22
0.075	705	10340	97.1	2.9	0-5

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Job No.: CECTC-MK-PMC-2014-15 Date : 27.05.2014

GRADATION FOR WMM
MORTH TABLE-400-11

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Agency : **Sri. M. Krishnamurthy,** Contractor, Bangalore.
Name of Work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Refrence : EE/RRND/PR/06-1/2013-14 Dated: 07.01.2014
Date of Testing : 27.05.2014
Material Type : Wet Mix Macadam
Sample Location : At Site Oven Dry Wt (gm): **10664**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	369	369	3.5	96.5	95-100
22.4	3565	3934	36.9	63.1	60-80
11.2	1990	5924	55.6	44.4	40-60
4.75	1760	7684	72.1	27.9	25-40
2.36	1185	8869	83.2	16.8	15-30
0.600	765	9634	90.3	9.7	8-22
0.075	720	10354	97.1	2.9	0-5

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Job No.: CECTC-MK-PMC-2014-15 Date : 27.05.2014

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Client : **Executive Engineer,** Rajarajeshwari Nagara Division, BBMP, Bangalore.
Agency : **Sri. M. Krishnamurthy,** Contractor, Bangalore.
Name of Work : Providing and Laying HDPE Water line in HMT Layout Block 4in JP Park Ward No 17.
Refrence : EE/RRND/PR/06-1/2013-14 Dated: 07.01.2014
Date of Testing : 27.05.2014
Material Type : Wet Mix Macadam
Sample Location : At Site

As per MORTH Table 400-13

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit	24.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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